Curriculum Development Prototyping Guide

(Accompanies **RFP AE-13-05**)

August 2013

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Purpose of Guide

This *Curriculum Development Prototyping Guide* accompanies the Government of Alberta Request for Proposals (RFP) No. **AE–13–05**. The purpose of this *Guide* is to provide:

1. information for potential vendors to prepare their proposal content for curriculum development prototyping (described on pages 12 and 13 of the RFP)
2. direction for successful vendors to develop the **RFP's** Curriculum deliverables in partnership with Alberta Education (described below and on pages 8 and 9 of the RFP).

Curriculum Development Prototyping Deliverables

Successful vendors will need to provide Curriculum deliverables in digital format. Curriculum product deliverables are identified below:

K–12 Scope and Sequence for Subject/Discipline Areas

Vendors will **develop** a draft K–12 scope and sequence for each of the following six subject/discipline areas, listed alphabetically:

1. Arts Education
2. Language Arts (English and/or French and/or Français)
3. Mathematics
4. Sciences
5. Social Studies
6. Wellness Education.

A full description of scope and sequence is provided on page 9.

Learning Outcomes

Vendors will **develop** draft learning outcomes for all six identified subject/discipline areas for each of the grades in the grade grouping(s) they will be prototyping. Vendors submitting proposals for the 10–12 grade-level grouping are only required to develop one course per grade for each of the identified subject/discipline areas. **Up to a maximum of 10 learning outcomes** per grade in each subject/discipline area are considered sufficient for providing teachers with the flexibility to design learning experiences that reflect the local context and address the needs of individual students. A full description of learning outcomes is provided on page 9.

Assessment

Vendors will **identify classroom-based assessments and/or develop draft classroom-based assessments** for each of the six identified subject/discipline areas they will be prototyping. Assessments identified and/or developed need to support the learning outcomes developed for each of the six subject/discipline areas. A full description of assessment is provided on page 7.

Learning and Teaching Resources

Vendors will **identify learning and teaching resources and/or develop draft learning and teaching resources** for use by students and teachers in each of the six identified subject/discipline areas they will be prototyping. A full description of learning and teaching resources is provided on page 8.

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Graphic Organizer

Vendors will develop a draft graphic organizer to illustrate the relationship among literacy, numeracy, the cross-curricular competencies and the subject/discipline areas that are essential for students to become engaged thinkers and ethical citizens with an entrepreneurial spirit as set out in the *Ministerial Order on Student Learning* announced on May 6, 2013.

Processes

We are all learners in the prototyping process. A key purpose of prototyping is to observe and evaluate co-creation of curriculum with the broader community that is consistent with the policy and cultural shifts and the shared responsibility required for transformational changes to the education system as envisioned in *Inspiring Education*. In learning together, we will ask vendors to:

- contribute to the research activities being carried out by an independent researcher or researchers to learn from the prototyping process for curriculum development.
- provide a summary report that includes an overview of the process used, a reflection on the experience, sharing of learnings and recommendations for the conditions and community engagement that will help to achieve the policy and cultural shifts of *Inspiring Education*.

Other

Vendors will also engage with Education to work collaboratively on the:

- draft components that anchor curriculum development in the appendices of this Guide
- Curriculum Development Application (CDA), which is currently under development, and/or other technology tools used in curriculum development prototyping.

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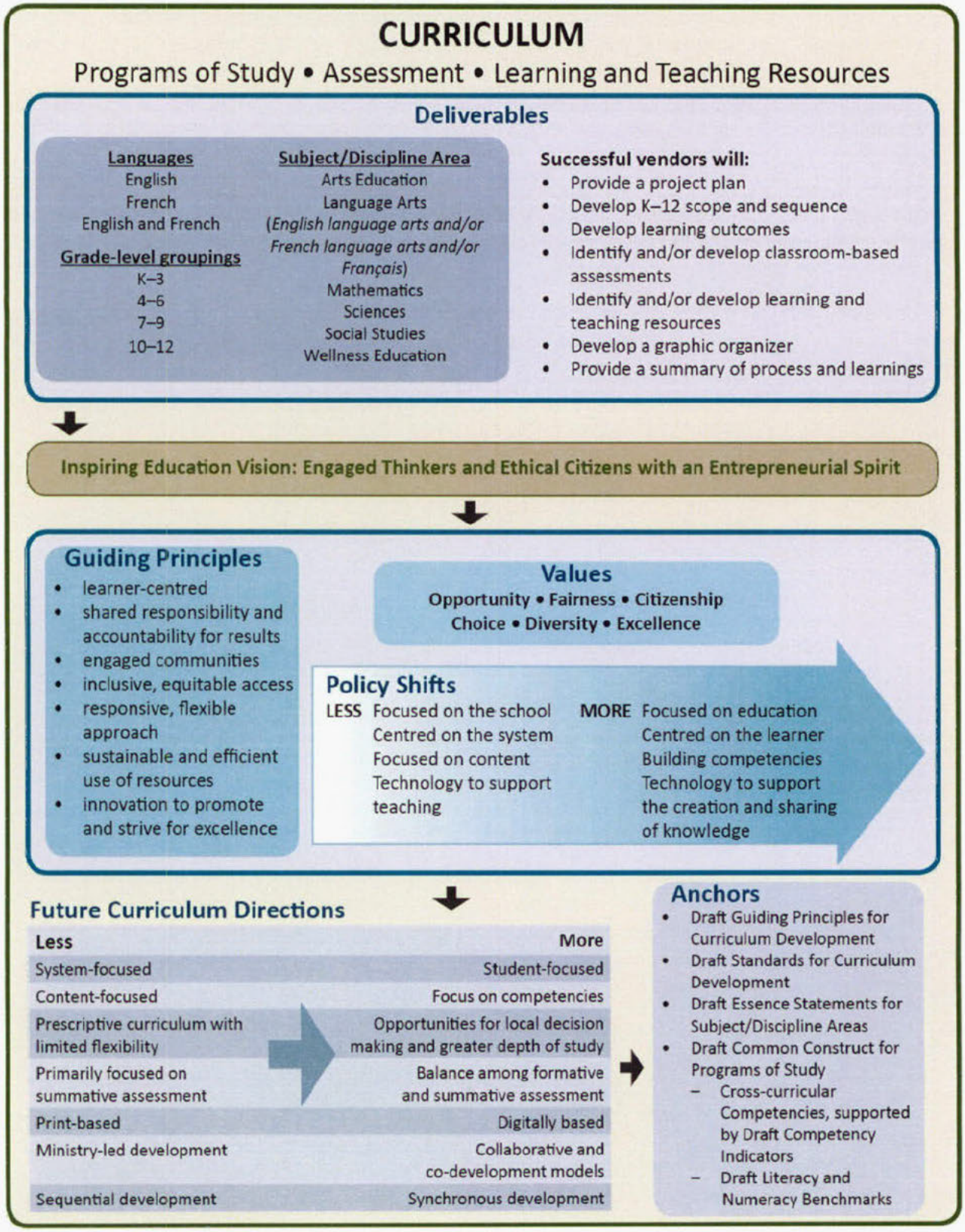
The visual organizer below shows the relationship among each of the components of this Guide.

Curriculum Development Prototyping Visual Organizer



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Background

The Education Act,[1] along with the *Ministerial Order on Student Learning* (#001/2013),[2] guides the development of curriculum. The *Inspiring Education: A Dialogue with Albertans*[3] Steering Committee Report (April 2010) outlines the vision, guiding principles, values and policy shifts for Alberta's education system based on conversations with thousands of Albertans. These form the foundation of the education system as identified in the *Preamble to the Education Act*. See Appendix A for the full Preamble.

Vision

The vision of *Inspiring Education* is transformational. All students are inspired to achieve success and fulfillment as **engaged thinkers** and **ethical citizens** with an **entrepreneurial spirit**.[4] The "Three Es" from *Inspiring Education* are described as follows.

Engaged Thinker: *"I collaborate to create new knowledge."*

> *I am competent in the **arts and sciences**, including **languages**. I know how to **think critically and creatively**, and how to make discoveries—through inquiry, reflection, exploration, experimentation, and trial and error. I use technology to learn, innovate, collaborate, communicate, and discover. I have developed a **wide range of competencies** in many areas including the gathering, analysis and evaluation of information.*
>
> *Because I am familiar with multiple perspectives and disciplines, I can first identify problems and then find the best solutions. As a team member, I integrate ideas from a variety of sources into a coherent whole and communicate these ideas to others.*
>
> *As I have grown up, I have seen many changes in society and the economy. I **adapt to change** with an attitude of optimism and hope for the future. As a **lifelong learner**, I believe there is no limit to what knowledge may be gleaned, what skills may be accumulated, and what may be achieved in cooperation with others. And always, I keep growing and learning.*

Ethical Citizen: *"I do the right thing because it is the right thing to do."*

> *It's not all about me. I have learned about and appreciate the effort and sacrifice that built this province and country. My education has helped me see beyond my self-interests to the needs of the community. As a result, I **contribute** fully to the world around me—economically, culturally, socially and politically. As a **steward of the earth,** I minimize environmental impacts wherever I go.*
>
> *I **build relationships** through humility; fairness and open-mindedness; and with **teamwork** and communication. I engage with many cultures, religions and languages. This enables me to **value diversity** in all people and adapt to any situation. I demonstrate respect, **empathy** and compassion for all people.*
>
> *I can **care for myself** physically, emotionally, intellectually, socially and spiritually, yet I am able to ask for help when needed from others and for others. I am well-prepared to **assume the responsibilities** of life—whether they be the duties of a parent, a neighbour, a mentor, or an employee or employer.*

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1. Alberta Education, 2013a.
2. Alberta Education, 2013b.
3. *Inspiring Education* Steering Committee, 2010a, pp. 5–6.
4. *Inspiring Education* Steering Committee, 2010a, pp. 19–20.

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Entrepreneurial Spirit: *"I create new opportunities."*

> *I am motivated, **resourceful**, and **self-reliant**. Many people describe me as tenacious because I continuously set goals and work with perseverance and discipline to achieve them. Through hard work, I **earn my achievements** and the respect of others. I strive for **excellence** and personal success.*
>
> *I am **competitive** and ready to challenge the status quo. I explore ideas and technologies by myself and as part of diverse teams. I am resilient and adaptable, and have the ability and determination to transform my discoveries into products or services that benefit my community and by extension, the world.*
>
> *I have the confidence to take risks and make bold decisions in the face of adversity, recognizing that to hold back is to be held back. I have the courage to dream..*[5]

Values

The following six core values underpin the "Three Es".

Opportunity
Learners are exposed to rich learning experiences that enable them to discover their passions and achieve their highest potential.

Fairness
Learners have access to the programs, support services, and instructional excellence needed to achieve desired outcomes.

Citizenship
Learners have pride in their community and culture. They have a sense of belonging and work to improve both the community and the world.

Choice
Learners have a choice of both programs and methods of learning.

Diversity
Learners' differing needs, cultures, and abilities are respected and valued within inclusive learning environments.

Excellence
Learners, teachers, and governors achieve high standards..[6]

Guiding Principles

The following seven principles from *Inspiring Education* guide education in Alberta:.[7]

- learner-centred
- shared responsibility and accountability for results
- engaged communities
- inclusive, equitable access
- responsive, flexible approach
- sustainable and efficient use of resources
- innovation to promote and strive for excellence.

---

5. *Inspiring Education* Steering Committee, 2010a, pp. 19–20.
6. *Inspiring Education* Steering Committee, 2010a, pp. 20–21.
7. *Inspiring Education* Steering Committee, 2010a, p. 7.

Policy Shifts

To achieve the vision of an educated Albertan, *Inspiring Education* identified the following shifts in policy:[8]

LESS	Focused on the school	**MORE**	Focused on education
	Centred on the system		Centred on the learner
	Focused on content		Building competencies
	Technology to support teaching		Technology to support the creation and sharing of knowledge

Directions for Future Curriculum

The redesign of curriculum is based on the policy shifts outlined earlier and the vision of "engaging curriculum that inspires every student every day." Future curriculum and its development will demonstrate the directions described below.

Less	More
System-focused	Student-focused
Content-focused	Focus on competencies
Prescriptive curriculum with limited flexibility	Opportunities for local decision making and greater depth of study
Primarily focused on summative assessment	Balance among formative and summative assessment
Print-based	Digitally based
Ministry-led development	Collaborative and co-development models
Sequential development	Synchronous development

Each of these directions for future curriculum is further described on the following pages.

Student-focused

Curriculum remains responsive and relevant for students and enables flexibility for teachers, as designers of learning opportunities, to meet the diverse needs of students.

Focus on Competencies

Curriculum enables meaningful connections within and among subject areas through a focus on competencies. Subjects/disciplines will continue to be taught and will be the vehicles through which literacy, numeracy and competencies are developed over time.

Opportunities for Local Decision Making and Greater Depth of Study

Programs of study with fewer learning outcomes enable greater flexibility at the local level.

8. *Inspiring Education* Steering Committee, 2010a, p. 22.

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Balance Among Formative and Summative Assessment

A range of assessments focus on the development of student learning outcomes, cross-curricular competencies, and literacy and numeracy.

Digitally based

The design of curriculum within a collaborative digital application enables curriculum to be improved continuously and supports learning with flexible timing and pacing through a range of learning environments.

Collaborative and Co-development Models

Co-creation of curriculum with partners and stakeholders taps into local expertise to design and develop curriculum.

Synchronous Development

An integrated approach to developing programs of study, assessments, and learning and teaching resources supports a common approach that encourages interdisciplinary learning and enables curriculum to be available in English and in French at the same time.

Understanding Curriculum

From a broad perspective, curriculum can be understood as the lived experience of students. From a provincial perspective, and for the purposes of curriculum development prototyping, curriculum development is focused on programs of study, assessments, and learning and teaching resources. All future curriculum will be accessed in an online environment to enhance the interconnectedness of these three components of curriculum. Such interconnectedness will allow for the selection and grouping of curricular components in multiple ways to support the development and delivery of a wide range of learning experiences.

Programs of Study

Provincial programs of study are prescribed by the Minister of Education and identify what students are to learn in all subject/discipline areas, at all grades. For the purposes of curriculum development prototyping, programs of study are to be designed around:

- learning outcomes for each subject/discipline area by grade level
- cross-curricular competencies and competency indicators
- literacy and numeracy benchmarks.

Assessment

Assessment is about student learning as well as evaluation of student progress. Assessment captures what students know, are able to do, and reflect on as they learn in relation to programs of study. Assessment is characterized by being supportive of all learning styles, being accessible for all students and providing evidence of learning through a balance of formative and summative approaches. Assessment is meaningful, authentic, clear, timely and ongoing. "Classroom-based assessments need to progress learning by providing valid and reliable data while ensuring that the student is integral to the process."[9] Future curriculum will see a shift in assessment—as programs of study change, so too will classroom and provincial assessments.

9. Townsend, Adams and White, 2010, p. 1.

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Learning and Teaching Resources

Learning and teaching resources support implementation of the programs of study, contribute to student achievement of the learning outcomes, and accommodate diverse learning needs. Learning and teaching resources support a range of authentic and relevant experiences that are appropriate for the subject/discipline area and emphasize inquiry, experiential hands-on learning, and the application of knowledge. Future learning and teaching resources have a significant role as supports for implementation and need to be available in a variety of formats to meet diverse student needs.

Curriculum Development Prototyping

Overview

Curriculum Redesign is informed by a review of research and literature. For example, the research report *From Knowledge to Action: Shaping the Future of Curriculum Development in Alberta* (2012) summarizes international and national research on curriculum development. As part of continuous improvement, our review of research and literature is ongoing.

Curriculum development prototyping is anchored in the following draft components:

- Draft Guiding Principles for Curriculum Development
- Draft Standards for Curriculum Development
- Draft Essence Statements for Subject/Discipline Areas
- Draft Common Construct for Programs of Study
    - Cross-curricular Competencies, supported by Draft Competency Indicators
    - Draft Literacy and Numeracy Benchmarks.

These draft components will serve as anchors for curriculum development. Information about each of these draft components is provided on the following pages and further detailed in the appendices. In a model of continuous improvement, each of these components will be further developed and refined, based on vendor feedback, as curriculum development prototyping proceeds.

Draft Guiding Principles for Curriculum Development

Draft Guiding Principles are overarching beliefs that provide the overall direction for curriculum development, whether in prototyping or provincial curriculum. The draft Guiding Principles are described in Appendix B.

Draft Standards for Curriculum Development

The draft Standards build on the draft Guiding Principles. These Standards are requirements that provide "must-do" direction for curriculum developers to ensure that provincial curriculum meets the purpose for which it is designed. Guidelines will assist in attaining the standards. The list of draft Standards is provided in Appendix C.

Draft Essence Statements for Subject/Discipline Areas

The draft Essence Statements outline what is unique to (essential characteristics or intrinsic nature of) a subject/discipline area. They provide the context for developing the scope and sequence for the learning in each subject/discipline area from K–12. The draft Essence Statements for the six identified subject/discipline areas are provided in Apprendix D.

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Scope and Sequence for Subject/Discipline Areas

Scope refers to the breadth and depth of the concepts to be learned in a K–12 subject/discipline area. Sequence refers to the order in which this learning is to take place from Kindergarten to Grade 12. A scope and sequence is rooted in what is developmentally appropriate for students in the particular subject/discipline area. It ensures that concepts are scaffolded from concrete to abstract and that there are opportunities for both broad and deep learning.

The scope and sequence is developed from the essence statements for each subject/discipline area. The scope and sequence outlines the subject/discipline area concepts (conceptual and procedural knowledge) to be developed and provides the frame for the organization and the development of the learning outcomes in the programs of study.

Cross-curricular competencies and literacy and numeracy benchmarks are not written into the scope and sequence or the learning outcomes as they are intended to work in concert with the learning outcomes.

Draft Common Construct for Programs of Study

The requirement for a Common Construct for Programs of Study is stated in Standard 14. The intent is to reduce redundancy, increase consistency, facilitate the development of literacy, numeracy and cross-curricular competencies across subject/discipline areas, and facilitate interdisciplinary learning. The Common Construct for Programs of Study includes the following components:

- learning outcomes for each subject/discipline area by grade level
- cross-curricular competencies, supported by competency indicators
- literacy and numeracy benchmarks.

Learning Outcomes

Vendors will develop up to a maximum of 10 learning outcomes for each of the six identified subject/discipline areas per grade for each of the grade-level groupings. Learning outcomes define what students know and are able to do in a subject/discipline area related to conceptual and procedural knowledge. Learning outcomes are written with consideration for the diverse learning needs of all students and the ability of educators to provide learning supports to students who require them to achieve the learning outcomes. Learning outcomes will provide sufficient information to be both observable and measurable in a variety of ways.

Learning outcomes align with essence statements and scope and sequence. Learning outcomes in programs of study for subject/discipline areas must support literacy and numeracy development from K–12 and clearly provide the opportunity for the development of cross-curricular competencies. Learning outcomes provide teachers with the flexibility to design learning experiences that reflect the local context and address the needs of individual students.

Cross-curricular Competencies and Draft Competency Indicators

A focus on competencies is less about knowing something and more about knowing how and where to access the needed information, and then engaging ethically and entrepreneurially with what is known to create and innovate. This shifts "education away from a process of disseminating information to a process of inquiry and discovery".[10] and to the application of knowledge. Competencies enable children and youth of all ages to develop "as individuals—emotionally, intellectually, physically, socially and

10. *Inspiring Education* Steering Committee, 2010a, p. 26.

spiritually.".[11] The following competencies, adapted from *Inspiring Education* and included in the *Ministerial Order on Student Learning*, contribute to the vision of students becoming engaged thinkers and ethical citizens with an entrepreneurial spirit:

- know how to learn: to gain knowledge, understanding or skills through experience, study and interaction with others;
- think critically: conceptualize, apply, analyze, synthesize, and evaluate to construct knowledge;
- identify and solve complex problems;
- manage information: access, interpret, evaluate and use information effectively, efficiently, and ethically;
- innovate: create, generate and apply new ideas or concepts;
- create opportunities through play, imagination, reflection, negotiation, and competition, with an entrepreneurial spirit;
- apply multiple literacies: reading, writing, mathematics, technology, languages, media, and personal finance;
- demonstrate good communication skills and the ability to work cooperatively with others;
- demonstrate global and cultural understanding, considering the economy and sustainable development; and
- identify and apply career and life skills through personal growth and well-being.[12]

A cross-curricular competency is an interrelated set of attitudes, skills and knowledge that is drawn upon and applied to a particular context for successful learning and living. The cross-curricular competencies are applied in developmentally appropriate contexts from K–12 and across subject/discipline areas. Cross-curricular competencies are closely associated with learning outcomes. Students develop cross-curricular competencies through the achievement of learning outcomes in programs of study.

Cross-curricular indicators have been developed for each competency and outline a learning progression, from lower to higher order behaviours, that enables the discovery, development and application of competencies across subject and discipline areas. The cross-curricular competency indicators:

- support the growth of the whole child
- are expectations (attitudes, skills, knowledge) that describe behaviours (emotions, thoughts and actions) that students demonstrate (ideas, processes, products and values) in their continued growth within a competency
- are developed in a learning progression
- enable personalized learning by allowing teachers to select the indicator that best meets the needs of the student and is appropriate to the context of the learning experience
- are used to inform the development of programs of study, assessment, and learning and teaching resources
- provide consistency for students as they develop and acquire competencies
- provide consistency in assessing and reporting student progress and achievement relative to the cross-curricular competencies.

Cross-curricular competency indicators will support the development of competencies that work in concert with learning outcomes in each of the subject/discipline areas. A full listing of cross-curricular competencies and draft competency indicators are provided in Appendix E.

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11. *Inspiring Education* Steering Committee, 2010a, p. 6.
12. Alberta Education, 2013b, pp. 2–3.

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Draft Literacy and Numeracy Benchmarks

Literacy and numeracy are foundational to all student learning. Literacy is more than the ability to read and write, and numeracy is more than the ability to solve number problems. Students need many ways to discover the world and make sense of it by acquiring, connecting, creating and communicating meaning in a variety of contexts throughout daily life.

Literacy and numeracy development from K–12 is supported by learning outcomes in programs of study. Literacy and numeracy benchmarks have been developed to describe students' progress along a continuum of developmentally appropriate expectations and behaviours. These benchmarks are useful for determining and supporting student progress.

The draft benchmarks are:

- expectations and behaviours that students demonstrate at each of five developmentally appropriate age groups in diverse contexts and for a variety of purposes
- inclusive, acknowledging that every student progresses at a different rate and in different ways
- organized by three components of literacy and numeracy development—Awareness, Knowledge and Understanding, and Strategies—that are developed in all subject/discipline areas and at all grade levels
- the responsibility of all educators because literacy and numeracy are developed through all Kindergarten to Grade 12 curriculum
- lifelong processes that begin at birth. The benchmarks begin with young children and continue with typical age ranges that we may see within the education system.

A full listing of draft literacy and numeracy benchmarks is provided in Appendix F.

Draft Working Organizer

The following graphic can be used to bring together the key components of curriculum and serves as a working organizer for prototyping. The Common Construct for Programs of Study, shaded in green, shows the interrelationships among its components (i.e., learning outcomes, cross-curricular competencies, and literacy and numeracy benchmarks).

<table>
<tr><td colspan="3">Vision: Engaged Thinkers and Ethical Citizens with an Entrepreneurial Spirit</td></tr>
<tr><td rowspan="4">K–12 Scope and Sequence</td><td colspan="2">Common Construct for Programs of Study</td></tr>
<tr><td colspan="2">Subject/Discipline Area and Grade Level</td></tr>
<tr><td>Learning Outcomes
I ...
I ...
I ...</td><td>Cross-curricular Competencies
– refer to pages 9–10 and Appendix E</td></tr>
<tr><td colspan="2">Literacy and Numeracy Benchmarks
– refer to page 11 and Appendix F</td></tr>
<tr><td colspan="2">Assessments</td><td>Learning and Teaching Resources</td></tr>
</table>

Parallel Processes and Next Steps

Prototyping allows the development of draft curriculum that can be further developed and validated using additional sites—scaling up—to ensure the curriculum meets the diverse needs of Alberta students in preparation for future provincial implementation.

Alberta Education is exploring new ways of empowering and collaborating with partners to achieve the policy and cultural shifts and the transformational educational changes envisaged in *Inspiring Education*. Prototyping encourages shared learning through collaboration, and consultation with partners, such as parents, subject-matter experts, other publicly funded Alberta school authorities, post-secondary institutions, educational organizations, resource developers, business and industry, and non-profit and community organizations throughout the process to ensure that a strong provincial social, cultural and economic perspective reflecting today's dynamic is inherent in the drafting of new curriculum. As an educational community, we must ensure that prototyping is informed by evidence and research. Together, we will learn from the process of prototyping and will ask vendors to (a) provide a report that informs the prototyping process, and (b) work with a researcher(s), contracted by Alberta Education, to evaluate the protoyping process for curriculum development from a provincial perspective.

The revised components that anchor curriculum development will continue to provide direction and guidance for the development of curriculum. Additional publicly funded Alberta school authorities that are interested will be invited to use and **further refine the draft curricula beginning in 2014/2015**. Professional development providers will work alongside curriculum developers and expanded prototype sites during "scaling up" to plan for and provide professional learning to prepare teachers and administrators for provincial implementation of the redesigned curricula.

The deliverables from prototyping and internal development may be integrated to finalize the development of the provincial programs of study for the six identified subject/discipline areas. Selected draft Kindergarten to grade 12 programs of study are anticipated to be developed by **March 2016**. Phasing in of provincial implementation will be determined in consultation with stakeholders and through feedback gathered with readiness instruments.

Prototyping is only an initial step in the development of provincial curriculum.

Care must be taken in each subsequent step to ensure that the products of prototyping can be practically adapted to fit the diversity of perspectives, identities and situations that exist in today's and tomorrow's education system. On the macro-level, Alberta Education is considering the effect of these important policy and cultural shifts in curriculum development and all other aspects of K–12 education, from high school credentialing and inclusion to strategies that will support students' transition into post-secondary and into the workforce. Careful thought will be given to the next steps of Curriculum Redesign, and in later stages, to supporting change through communications, professional learning and development and implementation strategies.

For example, a separate important and parallel process, and policy and cultural shift, is the reimagining and development of teacher competencies. As more teachers become facilitators of learning—encountering and bringing curriculum to life via meaningful and relevant learning experiences at the local level—more and more Alberta students will become the Engaged Thinkers and Ethical Citizens with an Entrepreneurial Spirit envisioned by Albertans in *Inspiring Education: A Dialogue with Albertans*.

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Appendix A

Preamble to the Education Act

WHEREAS the following visions, principles and values are the foundation of the education system in Alberta;

WHEREAS education is the foundation of a democratic and civil society;

WHEREAS education inspires students to discover and pursue their aspirations and interests and cultivates a love of learning and the desire to be lifelong learners;

WHEREAS the role of education is to develop engaged thinkers who think critically and creatively and ethical citizens who demonstrate respect, teamwork and democratic ideals and who work with an entrepreneurial spirit to face challenges with resiliency, adaptability, risk-taking and bold decision-making;

WHEREAS students are entitled to welcoming, caring, respectful and safe learning environments that respect diversity and nurture a sense of belonging and a positive sense of self;

WHEREAS education is a shared responsibility and requires collaboration, engagement and empowerment of all partners in the education system to ensure that all students achieve their potential;

WHEREAS the educational best interest of the child is the paramount consideration in making decisions about a child's education;

WHEREAS parents have the right and the responsibility to make informed decisions respecting the education of their children;

WHEREAS the Government of Alberta recognizes the importance of an inclusive education system that provides each student with the relevant learning opportunities and supports necessary to achieve success;

WHEREAS the Government of Alberta recognizes the need to smooth the transition for students between secondary education and post-secondary education or entry into the workforce;

WHEREAS the Government of Alberta recognizes the importance of enabling high quality and socially engaging learning opportunities with flexible timing and pacing through a range of learning environments to meet diverse student needs and to maximize student success;

WHEREAS the Government of Alberta believes in and is committed to one publicly funded education system that provides a choice of educational opportunities to students and that honours the rights guaranteed under the Constitution of Canada in respect of minority language and minority denominational education through the dimensions of public, separate and Francophone schools;

WHEREAS the Government of Alberta is committed to providing choice to students in education programs and methods of learning; and

WHEREAS the Government of Alberta is committed to encouraging the collaboration of all partners in the education system to ensure the educational success of Alberta's First Nations, Metis and Inuit students;

Statutes of Alberta, 2012
Chapter E-0.3
Pages 10-11

Appendix B

Draft Guiding Principles for Curriculum Development

Literacy, numeracy and cross-curricular competencies
Curriculum is designed to incorporate an interrelated set of attitudes, skills and knowledge that prepares students for success in an increasingly complex and evolving society.

Exploration and understanding
Curriculum is designed to support meaningful and relevant experiences through broad exploration and deep understanding.

Student-centred and inclusive
Curriculum is designed to engage and support all students, where student voice, responsible choice and shared ownership are at the heart of learning.

Ways of knowing
Curriculum is designed to acknowledge, value and respect different ways of knowing.

Ways of learning
Curriculum is designed to allow all students to achieve their potential by recognizing that there are diverse ways of learning and diverse ways of demonstrating learning.

Flexible learning environments
Curriculum is designed to meet students' learning needs and choices and to facilitate flexible approaches to teaching and learning in a variety of environments.

Responsive
Curriculum is designed to respond to the emerging needs of students and society, and to anticipate the growing complexity of the future, so as to optimize student learning and engagement.

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Appendix C

Draft Standards for Curriculum Development

Standard 1:	Curriculum (programs of study, assessment, and learning and teaching resources) must be inclusive of and accessible to all Alberta students.
	Curriculum is designed in a manner that, at the local level, allows for creating learning experiences that meet the specific needs of students, including those who require targeted or individualized instructional supports. All students should be able to participate in meaningful and engaging learning opportunities, including assessment, and be supported in the different ways in which they learn. Learning resources must adhere to the criteria set out in *Guidelines for Accessible Resources* to ensure that equitable opportunities are provided and barriers to learning are reduced.
Standard 2:	Curriculum must include diverse economic, social and cultural perspectives that reflect Alberta's role and responsibilities provincially, nationally and internationally.
	Curriculum is designed to engage and support students in understanding economic, social, and cultural perspectives in Alberta, Canada and the world. Curriculum must reflect a balanced approach to multiple perspectives. Throughout the curriculum development process, subject/discipline areas that directly focus on economic, social and cultural content will include business, industry and community voices to ensure the content is current, relevant and reflective of Alberta's past and its dynamic present. The curriculum will provide students the foundation to innovate, sustain Albertans' high quality of life and contribute to the global knowledge-based economy and society.
Standard 3:	Curriculum must include the diverse perspectives of First Nations, Métis and Inuit peoples living in Alberta in relation to historical and contemporary contexts.
	For curriculum to recognize and respect Indigenous knowledge and ways of knowing of First Nations, Métis and Inuit (FNMI) peoples, it must adhere to the guidelines set out in *Guiding Voices: A Curriculum Development Tool for the Infusion of First Nations, Métis and Inuit Perspectives*.
Standard 4:	Curriculum must support the linguistic development and cultural identity of Francophone students.
	Curriculum must provide opportunities for Francophone students to participate in rich linguistic and cultural learning experiences that support their identity as Francophones and their integration into Francophone communities/cultures at the local, national and global levels. Curriculum is designed to be adapted (not directly translated) where appropriate to meet Francophone student learning needs.
Standard 5:	Curriculum must be available for simultaneous implementation in English and French.
	The simultaneous availability of curriculum prior to provincial implementation, particularly those components targeted for use directly with students, ensures equity for Anglophone and Francophone students.

Standard 6:	Curriculum must be developmentally appropriate for the cognitive, affective and psychomotor learning domains.
	Curriculum is designed to ensure students' development in each of the three learning domains. The learning domains (cognitive, affective and psychomotor) characterize the manner in which people learn. Together they provide the construct for defining what students will know, be able to do, and become as learners. The *Cognitive* domain relates to the acquisition of facts and concepts and one's ability to apply that knowledge; i.e., the development of the intellectual skills, including metacognition (the ability to consciously know and reflect on how one thinks and learns). The *Affective* domain relates to one's feelings, emotions, attitudes, motivation and self-identity, playing an important role in how students acquire knowledge and develop cognitive skills. The *Psychomotor* domain focuses on skills that require practice and are assessed in terms of precision, speed, distance and the degree to which procedures or techniques are carried out.
Standard 7:	Curriculum must enable learning with flexible timing and pacing in a range of learning environments to meet diverse student needs and choice.
	Curriculum is designed so that it enables learning to occur in a variety of learning environments, including the community and the broader world, while meeting students' needs and choice. Its design allows for effective use with different groupings of students in any environment in which learning occurs. Programs of study are written in a manner that allows for flexibility at the local level in terms of timing, pacing and learning environments.
Standard 8:	Curriculum must provide opportunities for transferability of learning to support broad exploration that leads to deeper learning.
	Curriculum is designed to provide a balanced approach to learning through broad exploration of concepts found within a subject or discipline area and through the provision of learning experiences that deepen students' learning. In order for deep learning to occur, the relationship among concepts within and across subject or discipline areas must be evident. As curriculum is developed, the content selected will enable students to look for patterns, to synthesize and apply acquired knowledge to solve problems creatively by providing opportunities to link knowledge across subject/discipline areas and connect past, current and future learning. Opportunities also need to be available to apply learning to new situations.
Standard 9:	Curriculum must provide clear evidence of literacy and numeracy within and across subject/discipline areas.
	Curriculum is designed to develop literacy and numeracy within subject/discipline areas, within a grade and across grades. Literacy and numeracy benchmarks are used to inform the development of the learning outcomes of programs of study or courses and assessments. Learning and teaching resources support literacy and numeracy. Assessments provide feedback on literacy and numeracy development.

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Standard 10: Curriculum must provide clear evidence of cross-curricular competencies within and across subject/discipline areas.

Curriculum is designed to make cross-curricular competencies evident in all subject/discipline areas to a degree that they are observable and measurable. Cross-curricular competency indicators are used to inform the development of the learning outcomes of programs of study or courses and assessments. Learning and teaching resources support cross-curricular competencies. Assessments provide feedback on cross-curricular competencies development.

Standard 11: Curriculum must be congruent across its components.

Curriculum is designed so that the three components (programs of study, assessments, and learning and teaching resources) mutually support one another.

Standard 12: Curriculum must use plain language.

Curriculum is designed using a balance between terminology specific to a subject/discipline area and plain language so that it can be understood and consistently interpreted by administrators, teachers, students, parents and the public at large. Subject/discipline area specific language and terminology are used accurately and consistently within and across curriculum and reflect the most up-to-date language usage.

Standard 13: Curriculum must be available digitally.

Curriculum must be developed and made accessible in digital formats that allow for seamless integration of curriculum components in a range of learning environments, providing teachers with the opportunity to create learning experiences that meet the needs of students.

Standard 14: Programs of study or courses must use a common construct.

Programs of study are designed using a common construct to allow for ease of use. A common construct ensures that content selection is streamlined and focused on literacy and numeracy, cross-curricular competencies and learning outcomes for a subject/discipline area.

Standard 15: Learning outcomes must be written in the active voice, using "I" statements.

Learning outcomes use verbs that state an action to be accomplished by the student in keeping with the cognitive, affective and psychomotor domains. In order for students' voice to be present and for students to be able to take ownership for their learning, the use of "I" statements assists in simplifying language use.

Standard 16: Learning outcomes must be written so as to be observable and measurable.

Learning outcomes are written so that they can be observed and described, either quantitatively or qualitatively, to show each student's learning progression in a program of studies or course.

Standard 17: Assessment must be purposeful and fair, respecting students' diverse learning needs and student choice.

Assessment involves the process of collecting varied evidence over a period of time that shows what students know (attitudes, skills and knowledge in subject/discipline area) and the degree to which they are able to demonstrate what they know and can do.

Assessment is equitable for all students and transparent to all users (e.g., students, parents, educators) as to what is being assessed, the method of assessment, performance standards that will be utilized to describe the learning and how the results obtained will be used.

Standard 18: Assessment must include the reporting of student learning and student achievement.

Assessment provides valuable data for all users to inform student learning and success. This data is used to make decisions about students' progress (formative), their achievement (summative), and their future learning.

Standard 19: Curriculum must be reviewed on a continuous basis to ensure accuracy, currency and relevancy.

A curriculum review is initiated when there are changes in a subject/discipline area, such as changes in geographical demarcations (e.g., a country's civil war separates the state into different entities).

To support a continuous improvement model, an overall review of curriculum will be carried out within 48 months of its initial implementation in schools.

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Appendix D

Draft Essence Statements for Subject/Discipline Areas

Arts Education is ...

- giving voice to celebrate or challenge norms, traditions and values through the disciplines of dance, drama, music and visual art
- using creative expression of ideas and emotions to foster abstract thought, creativity, flexibility and perseverance
- acquiring and applying discipline-specific concepts, techniques and related vocabulary to increase capacity for the effective pursuit of artistic goals
- engaging in artistic works to build relationships and develop a sense of belonging within communities
- studying the aesthetic qualities and influences of the arts on individuals and groups.

Language Arts is ...

- using viewing, representing, listening, speaking, reading and writing as unique, continuous and interconnected domains to facilitate thought and enrich language
- constructing and creating meaning from diverse forms of text, through the study of language, skills and strategies within various contexts
- exploring, shaping and refining thoughts, emotions and experiences through an understanding and crafting of language and medium
- entering into the experiences of others and ourselves, through stories, to construct deep understanding and appreciation, contributing to self-awareness, empathy, culture and community
- fostering relationships between aesthetic experience and language to enrich perception, emotion and understanding.

Mathematics is ...

- analyzing and applying patterns and relationships, using concrete, pictorial and symbolic representations
- using inductive and deductive reasoning to test generalizations and draw conclusions
- understanding numbers and numerical operations used to develop strategies for mental mathematics, estimation and computational fluency
- using spatial reasoning to measure, analyze and represent quantities, shapes and objects
- using systematic processes to make predictions that involve data, chance or uncertainty.

Science is ...

- engaging in the human pursuit to understand the relationships within the living and nonliving universe
- developing explanations and predictions that can be tested and refined through the process of scientific inquiry
- understanding systems consisting of interconnected living and nonliving components
- understanding static and dynamic balance of matter and energy
- understanding patterns of similarity and diversity
- understanding relationships between structure and function.

Social Studies is ...

- developing active and responsible citizenship through understandings of diversity and equality
- developing a sense of belonging and understandings of identity, place, land, culture and community
- building understandings of Canada's pluralistic, bilingual, multicultural, inclusive and democratic society
- developing understandings of power, authority and decision making
- developing understandings of economics through exploration of the management, distribution and use of resources and the creation of prosperity
- applying geographic thinking to develop understandings of relationships that people have with land, place and the environment
- applying historical thinking to develop understandings of continuity and change over time
- exploring the interdependency of people in the world to foster social consciousness.

Wellness Education is ...

- balancing emotional, intellectual, physical, social and spiritual well-being that enables individuals to reach their full potential
- acknowledging, understanding and managing emotions and feelings
- developing and understanding interpersonal skills required for healthy relationships
- understanding the role of physical activity, nutrition and personal care in contributing to optimal health
- exploring career development through planning and transitioning in a variety of life roles
- acquiring the fundamentals of finance to make responsible decisions to improve the financial well-being of self and others.

Appendix E

Cross-curricular Competencies and Draft Competency Indicators

Reading the Cross-curricular Competencies and Competency Indicators Chart:

Cross-curricular competencies are developed by every student, in every grade across every subject/discipline area over time.

A: Know how to learn—to gain knowledge, understanding or skills through experience, study and interaction with others

A1 Develop a resourceful and resilient learner identity through reflective practices.	A1.1 I identify reflective practices to build self-awareness.	A1.2 I examine my personal resources (strengths, talents, skills, interests and learning styles) to develop strategies that support my learning.	A1.3 I apply awareness and understanding of my thought process to support my learning.	A1.4 I self-assess to make conscious and confident choices that enhance and extend my learning.	A1.5 I value learning, working or leading by sharing knowledge, skills and experiences, and by demonstrating a resourceful and resilient learner identity.

An organizing **element** assists in exploring the breadth and depth of the cross-curricular competency.

Cross-curricular competency **indicators** have been developed for each competency and outline a learning progression from lower- to higher-order behaviours.

few in number, great in scope

A: Know how to learn—to gain knowledge, understanding or skills through experience, study and interaction with others					
A1 Develop a resourceful and resilient learner identity through reflective practices.	A1.1 I identify reflective practices to build self-awareness.	A1.2 I examine my personal resources (strengths, talents, skills, interests and learning styles) to develop strategies that support my learning.	A1.3 I apply awareness and understanding of my thought process to support my learning.	A1.4 I self-assess to make conscious and confident choices that enhance and extend my learning.	A1.5 I value learning, working or leading by sharing knowledge, skills and experiences, and by demonstrating a resourceful and resilient learner identity.
A2 Optimize the development of new knowledge, understanding and skills through experiences, interaction and exploration.	A2.1 I identify ways I use my interests, talents, passions, skills or knowledge to contribute to my learning.	A2.2 I examine new and innovative learning approaches through interactions and explorations with others.	A2.3 I implement and refine strategies to maximize learning in a variety of authentic learning situations.	A2.4 I evaluate a variety of supports and resources to help meet learning goals and become self-reliant.	A2.5 I optimize learning opportunities.

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B: Think critically—conceptualize, apply, analyze, synthesize and evaluate to construct knowledge					
B1 Cultivate abilities to think critically.	B1.1 I identify situations that would benefit from in-depth thinking or conceptualization.	B1.2 I question and analyze relevant evidence, assertions or assumptions.	B1.3 I synthesize thoughts and information to extend understandings.	B1.4 I evaluate the reasoning behind thoughts and actions.	B1.5 I advocate taking personal responsibility for the ethical implications of thoughts and actions.
B2 Develop qualities of critical thinking.	B2.1 I recognize that diverse thinking deepens and broadens understandings.	B2.2 I consider factors that influence thoughts and actions.	B2.3 I engage in critical thinking with respect, humility and open-mindedness.	B2.4 I address differences, uncertainty or ambiguity using a variety of thinking skills.	B2.5 I value intellectual courage by respectfully challenging or affirming beliefs, values or actions.
C: Identify and solve complex problems					
C1 Generate solutions to complex problems.	C1.1 I identify and clarify problems.	C1.2 I establish clear criteria to make informed decisions or solve problems.	C1.3 I explore and apply problem-solving strategies to generate possible solutions.	C1.4 I assess the potential impact of possible solutions to select the most viable option.	C1.5 I defend decisions that reflect responsible citizenship.
D: Manage information—access, interpret, evaluate and use information effectively, efficiently, and ethically					
D1 Understand, critically interpret and respectfully use information.	D1.1 I search and access information using local or global sources and a variety of means.	D1.2 I make connections with information.	D1.3 I apply strategies to select, interpret and understand information for responsible use.	D1.4 I authenticate and evaluate information to apply information appropriately.	D1.5 I verify ambiguities, intentions or perspectives to deepen understandings and use information respectfully.
D2 Advocate and practise safe, legal and ethical management of information and technology.	D2.1 I recognize the expectations and consequences regarding safe, legal and ethical use of information and technology.	D2.2 I analyze the ethical use of information and technology.	D2.3 I demonstrate consideration for the appropriate use of information and technology.	D2.4 I evaluate the impact of information and technology on local and global communities.	D2.5 I advocate for the ethical and responsible use of information and technology that fosters local and global citizenship.
E: Innovate—create, generate and apply new ideas or concepts					
E1 Develop attitudes that foster creativity and innovation.	E1.1 I recognize the need to be flexible and adaptable to create or innovate.	E1.2 I take risks and learn from mistakes when developing creative ideas or innovations.	E1.3 I respectfully challenge the status quo to enhance creative ideas or innovations.	E1.4 I demonstrate optimism, resiliency and perseverance when dealing with mistakes and challenges.	E1.5 I demonstrate the confidence to think and act creatively or to implement innovative ideas.
E2 Create, generate and apply innovative concepts.	E2.1 I identify situations or challenges that would benefit from creativity or innovation.	E2.2 I explore a variety of techniques, strategies and processes to create or innovate.	E2.3 I access and select relevant materials and resources to create or innovate.	E2.4 I experiment with models, prototypes or simulations to explore creative scenarios.	E2.5 I adapt innovations to align with objectives and recreate when necessary.

F: Create opportunities—through play, imagination, reflection, negotiation and competition—with an entrepreneurial spirit					
F1 Create opportunities to benefit communities.	F1.1 I exercise my imagination to discover opportunities including products or services to contribute to local or global communities.	F1.2 I explore attributes such as risk taking, independence, drive, perseverance and self-reliance that reflect an entrepreneurial spirit.	F1.3 I negotiate partnerships or networks to further creative ideas or endeavours, or transform discoveries into products or services.	F1.4 I evaluate ideas, processes, products or services to implement those with potential value.	F1.5 I model entrepreneurial spirit by striving for excellence in ideas, products or services to achieve personal, family and community success.
G: Apply multiple literacies—reading, writing, mathematics, technology, languages, media and personal finance					
G1 Attain broader and deeper understandings through multiple literacies.	G1.1 I recognize that there are multiple literacies through which to gain or convey understandings of the world.	G1.2 I compare or confirm information attained through multiple literacies.	G1.3 I employ multiple literacies to create or share new understandings.	G1.4 I evaluate and justify the suitability of specific literacies to leverage information purposefully.	G1.5 I integrate multiple literacies to become confident in my ability to inform beliefs, actions or decisions.
G2 Engage in multiple literacies through tools and resources used to store, create or deliver information.	G2.1 I am aware of existing or emerging tools or resources.	G2.2 I explore the capabilities of various tools, resources or design.	G2.3 I innovate with tools, resources or design to reach new understandings.	G2.4 I evaluate how choice of tools, resources or design may create different understandings from the same information.	G2.5 I confidently manipulate tools, resources or designs to create new understandings in multiple contexts.
H: Demonstrate good communication skills and the ability to **work cooperatively** with others					
H1 Communicate effectively or empathetically with audiences of diverse backgrounds.	H1.1 I identify the purpose or intention of a message.	H1.2 I examine diverse perspectives or contexts when receiving or sending messages.	H1.3 I apply strategies or protocols to receive or express messages to varied audiences.	H1.4 I evaluate how challenges to communication influence the creating and understanding of messages.	H1.5 I take personal responsibility to communicate effectively, empathetically or ethically to benefit others.
H2 Build community through collaboration, leadership and valuing diversity.	H2.1 I describe interpersonal skills that contribute to effective relationships.	H2.2 I interact in a way that acknowledges diverse opinions or contributions to build teams or relationships.	H2.3 I foster collaboration through shared leadership, flexibility and responsible decision making to benefit diverse communities.	H2.4 I facilitate visioning, goal setting and action planning to support collaboration and enhance community.	H2.5 I advocate for resilient and collaborative communities essential to living in an increasingly interconnected world.

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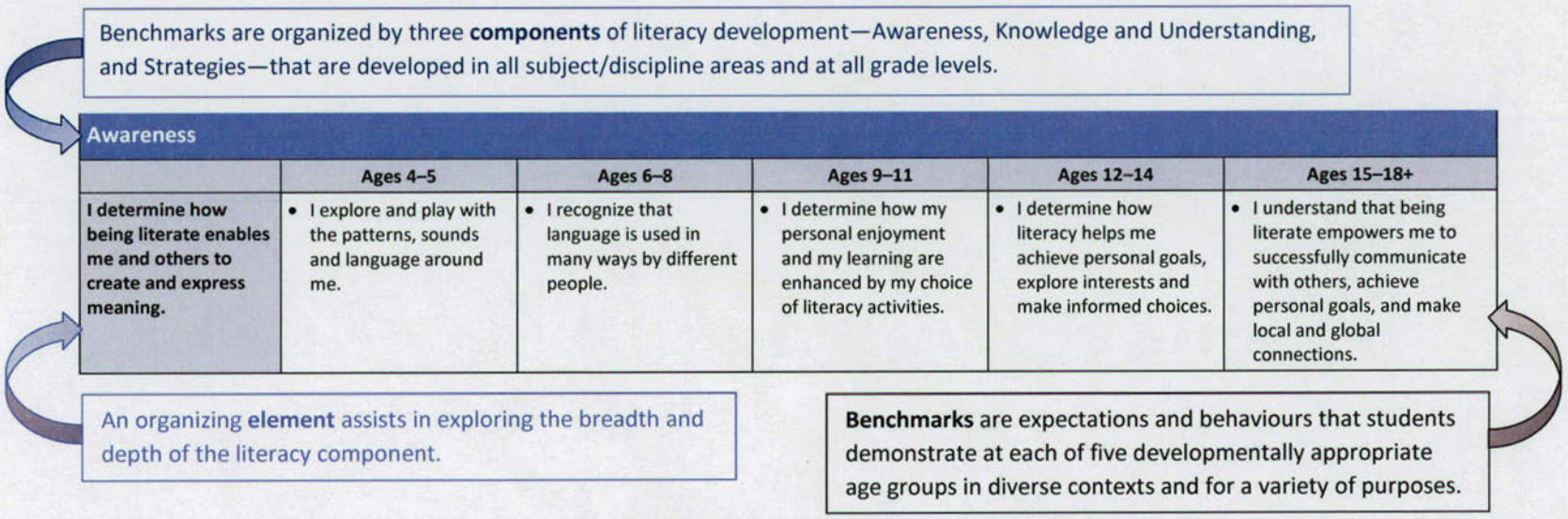
I: Demonstrate global and cultural understanding—considering the economy and sustainable development					
I1 Understand economic, environmental and political aspects of interconnections and issues.	I1.1 I identify and describe economic, environmental or political aspects of communities.	I1.2 I examine how decisions are made about resources in various communities.	I1.3 I analyze various ways that decisions can affect the economic, environmental or social well-being of diverse communities.	I1.4 I evaluate the impact of human activity on the quality and sustainability of economic, environmental and social systems.	I1.5 I advocate choices and activities that promote healthy and sustainable economic, environmental and social systems.
I2 Value the social and cultural diversity of communities	I2.1 I identify and explore diverse social or cultural identities, roles or interests.	I2.2 I examine how diverse perspectives can influence relationships and interactions in local or global communities.	I2.3 I analyze how individuals or groups with diverse social and cultural identities, roles and interests collaborate to strengthen communities.	I2.4 I evaluate how communities address issues to ensure that diverse social and cultural identities, roles and interests are included.	I2.5 I am committed to democratic ideals.
I3 Take personal responsibility as a local and global contributor and leader, and as an environmental steward.	I3.1 I am aware of diverse roles within economic, environmental or social systems.	I3.2 I examine various ways to take initiative as an environmental steward and as a local or global contributor.	I3.3 I demonstrate personal responsibility by participating in activities that contribute to healthy and sustainable economies, environments or communities.	I3.4 I create plans of action to promote healthy and sustainable economies, environments and communities.	I3.5 I demonstrate leadership to promote the vitality of diverse economies, environments and communities.
J: Identify and apply career and life skills—through personal growth and well-being					
J1 Take personal responsibility to identify and apply career and life skills through personal growth and well-being.	J1.1 I recognize my personal resources and values such as work ethic, self reliance and responsibility and seek opportunities to develop these in a variety of contexts.	J1.2 I examine my interests, values or skills in order to inform my lifelong learning, career or wellness choices.	J1.3 I use a variety of community and personal resources, services, programs or relationships to support my personal growth and well-being and that reflect my values.	J1.4 I assess my skills, knowledge, attitudes and values for possible application in various roles and contexts.	J1.5 I integrate career development and personal well-being into my lifelong learning.

Appendix F

Draft Literacy and Numeracy Benchmarks

Reading the Literacy Benchmarks Chart:


Benchmarks are organized by three components of literacy development—Awareness, Knowledge and Understanding, and Strategies—that are developed in all subject/discipline areas and at all grade levels.
Awareness
Ages 4–5
Ages 6–8
Ages 9–11
Ages 12–14
Ages 15–18+
I determine how being literate enables me and others to create and express meaning.
• I explore and play with the patterns, sounds and language around me.
• I recognize that language is used in many ways by different people.
• I determine how my personal enjoyment and my learning are enhanced by my choice of literacy activities.
• I determine how literacy helps me achieve personal goals, explore interests and make informed choices.
• I understand that being literate empowers me to successfully communicate with others, achieve personal goals, and make local and global connections.
An organizing element assists in exploring the breadth and depth of the literacy component.
Benchmarks are expectations and behaviours that students demonstrate at each of five developmentally appropriate age groups in diverse contexts and for a variety of purposes.

Literacy Benchmarks

Awareness					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I determine how being literate enables me and others to create and express meaning.	• I explore and play with the patterns, sounds and language around me.	• I recognize that language is used in many ways by different people.	• I determine how my personal enjoyment and my learning are enhanced by my choice of literacy activities.	• I determine how literacy helps me achieve personal goals, explore interests and make informed choices.	• I understand that being literate empowers me to successfully communicate with others, achieve personal goals, and make local and global connections.

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Awareness (continued)					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I use my literacy skills to represent what I know, what I am able to do and what I need to learn.	• I use language, drawings or objects to help me explain what I know and am able to do.	• I share samples, drawings, objects or symbols to help me explain what I know, what I am able to do and to identify some of my further learning needs.	• I select some samples of my work that illustrate my literacy knowledge and strategies, and help me identify some of my further learning needs.	• I select the best samples of my work and explain how they demonstrate my literacy knowledge and application of literacy strategies, and how they allow me to identify some of my further learning needs.	• I select samples and explain how my work demonstrates my transfer of literacy knowledge and strategies, and illustrates my further learning needs.

Knowledge and Understanding					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I communicate to define and develop concepts, ideas and understandings.	• I interpret and use familiar and new vocabulary related to personal and school contexts. • I adjust language to interact appropriately with peers and adults.	• I interpret and use new vocabulary related to personal experiences, school contexts and explored in topics. • I adjust language to interact with peers and adults to share ideas, express opinions and pose questions.	• I interpret and use new vocabulary related to personal experiences, topics and subject-related concepts. • I adjust language with peers and adults in formal or informal situations and respond in ways to show that I respect others.	• I interpret and select appropriate vocabulary related to personal experiences and opinions explored in topics and subject-specific concepts. • I adjust language, tone, formality and, as appropriate, cultural practices within the school or community and respond in ways to show that I respect and value others' contributions and opinions.	• I interpret and select precise and descriptive vocabulary related to personal experiences and opinions, complex topics and subject-specific concepts. • I consistently adjust language registers and, as appropriate, cultural practices for a variety of audiences, purposes and contexts, and respond in ways to show that I value and respect others' contributions, ideas and points of view.

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Literacy Benchmarks (continued)

Knowledge and Understanding (continued)					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I use my knowledge of structures, rules and tools of language to communicate meaning.	• I use stories, pictures and words to express meaning.	• I communicate clear messages by choosing symbolic representations and attending to conventions by using a tool or reference to enhance communication.	• I communicate clear messages by experimenting with text structures and attending to conventions by using a tool or reference to enhance communication.	• I communicate clearly by choosing effective text structures and attending to conventions by using a tool or reference to enhance communication.	• I communicate clearly and effectively by monitoring and adjusting the use of text structures, and attending to conventions by using a tool or reference to enhance communication.
I use diverse texts and media to develop concepts, ideas and understandings.	• I explore how many forms of media express experiences and ideas.	• I explore how diverse modes and media offer different qualities to help record and communicate ideas and experiences.	• I explore and understand how diverse modes and media offer different qualities to help record and communicate experiences, ideas and understandings.	• I explore and understand how diverse modes and media effectively represent and communicate experiences, concepts and understandings.	• I explore and understand how diverse modes and media effectively represent or reframe experiences, concepts and understandings.

Strategies					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I connect and select background knowledge and personal experiences to develop new understandings.	• I share personal experiences related to literacy situations that trigger my curiosity or interest.	• I access personal experiences and background knowledge related to literacy situations that trigger my curiosity or interest.	• I access personal experiences and background knowledge related to literacy situations to address my question, problem or curiosity and identify gaps in background knowledge.	• I access personal experiences and background knowledge related to literacy situations to address my question, problem or curiosity, identify gaps in background knowledge and determine ways to fill those knowledge gaps.	• I access personal experiences and background knowledge related to literacy situations to address my question, problem or curiosity, identify areas that require further refinement and determine ways to develop deeper knowledge or understandings.

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Literacy Benchmarks (continued)

Strategies (continued)					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I use effective and efficient strategies to acquire knowledge and understandings.	• I share my personal questions or reasons to explore texts and search for information collectively.	• I develop my questions, reasons or topics to explore texts and search for useful information.	• I apply search techniques to identify and select useful sources to answer my question.	• I clarify my information need and develop processes to select the most useful and relevant sources.	• I define and refine my information need, deliberately select effective sources and determine how to meet additional information needs.
I use effective and efficient strategies to respond to knowledge and understandings.	• I monitor my understanding collectively, by attending to illustrations, sharing what I think might happen next, drawing or role-playing. • I evaluate information collectively, by identifying real or imaginary information, and asking and answering questions.	• I monitor my understanding, using a range of actions such as decoding, reviewing and requestioning, retelling, or describing the main idea and details. • I evaluate information collectively, using a range of actions such as using graphic organizers, identifying fact and fiction and relevant and irrelevant information.	• I monitor my understanding, using a range of actions such as visualizing, making predictions or posing questions to seek deeper understanding. • I evaluate information, using a range of actions such as finding similar information in a number of sources or determining if I have answered my intention, topic or problem and adding information as needed.	• I monitor my understanding, using a range of actions such as cross-checking, reviewing, confirming, self-correcting or using contextual cues and keywords. • I evaluate information, using a range of actions such as conceptual mapping, classifying and comparing information, or considering context or perspectives.	• I monitor my understanding, through the deliberate use of a range of actions such as using text features, filtering for ideas or concepts, making inferences or forming and testing hypotheses. • I evaluate information, using a range of actions such as identifying misconceptions, perspectives, points of view and biases, determining the reliability, validity and authenticity of information.

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Literacy Benchmarks (continued)

Strategies (continued)					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I use effective and efficient strategies to generate and share ideas and information.	• I generate ideas and explore ways to share information through shared talk, stories and representations.	• I experiment with ways to explore or generate ideas on a question, topic or problem. • I present ideas or information in a logical and clear progression using strategies such as identifying information under main ideas, grouping information into categories or using models.	• I explore several ways to generate ideas about a question, topic or problem. • I ensure logical progression and clarity in communication by sequencing events, making simple comparisons or using text forms that meet the needs of the audience.	• I expand or focus more deeply on a question, topic or problem to generate other ideas. • I develop texts coherently and cohesively by using cause-and-effect, exploring effects to enhance communication or reviewing for purpose, ideas and audience.	• I explore complex information and a wide range of experiences to challenge assumptions, and generate and refine ideas. • I develop texts coherently and cohesively by identifying and using relationships or patterns, choosing and refining text structures, integrating specific effects or analyzing and enhancing the interplay of media and message.

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Reading the Numeracy Benchmarks Chart:

Benchmarks are organized by three **components** of numeracy development—Awareness, Knowledge and Understanding, and Strategies—that are developed in all subject/discipline areas and at all grade levels.

Awareness					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I determine how being numerate enables me and others to create and express meaning.	• I recognize and engage with data that is all around me.	• I recognize and engage with data that is represented in many ways in my immediate environment and community.	• I use language, knowledge and strategies to build common understandings across disciplines, in everyday situations, and in my community.	• I apply language, knowledge and strategies to build common understandings across disciplines, in everyday situations, and in my community.	• I willingly use numeracy to make sense of the world and communicate accurately with others. • I demonstrate confidence to make informed judgments.

An organizing **element** assists in exploring the breadth and depth of the numeracy component.

Benchmarks are expectations and behaviours that students demonstrate at each of five developmentally appropriate age groups in diverse contexts and for a variety of purposes.

Numeracy Benchmarks

Awareness					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I determine how being numerate enables me and others to create and express meaning.	• I recognize and engage with data that is all around me.	• I recognize and engage with data that is represented in many ways in my immediate environment and community.	• I use language, knowledge and strategies to build common understandings across disciplines, in everyday situations, and in my community.	• I apply language, knowledge and strategies to build common understandings across disciplines, in everyday situations, and in my community.	• I willingly use numeracy to make sense of the world and communicate accurately with others. • I demonstrate confidence to make informed judgments.
I use my numeracy skills to represent what I know, what I am able to do and what I need to learn.	• I use representations to help me explain what I know and what I am able to do.	• I use more than one representation to explain what I know, what I am able to do and to identify some of my further learning needs.	• I select some samples of my work that illustrate my application of knowledge and strategies, and that help me identify some of my further learning needs.	• I select the best samples of my work that illustrate my application of knowledge and strategies, and that allow me to identify some of my further learning needs.	• I select samples and explain how my work demonstrates my transfer of knowledge and strategies, and how it illustrates my further learning needs.

Numeracy Benchmarks (continued)

Knowledge and Understanding					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I create and communicate representations to define and develop my understanding of concepts and ideas.	• I use simple vocabulary, drawings and data to communicate my understandings.	• I interpret and use accurate vocabulary, pictures, symbols, objects and data to communicate my understandings.	• I interpret and use multiple representations to communicate my understandings.	• I integrate multiple representations to define, develop and communicate my understandings.	• I move with ease and fluidity between different representations of information to define, develop and communicate concepts, ideas and understandings.
I use knowledge of quantitative and spatial concepts to construct and create meaning.	• I use my knowledge of patterns, number, shape and space to help me observe and investigate my immediate world.	• I connect my knowledge of patterns, number, shape and space to help me observe and investigate the world.	• I use my knowledge of patterns, number, shape, space, statistics and probability to help me observe, investigate and make connections in the world.	• I apply my knowledge of patterns, number, shape, space, statistics and probability to help me observe, investigate and interact in the world.	• I transfer my knowledge of patterns, number, shape, space, statistics and probability to help me observe, investigate and make reasoned decisions about the world.

Strategies					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I connect and select background knowledge and personal experiences to create new understandings.	• I share personal experiences related to numeracy situations that trigger my curiosity or interest.	• I access personal experiences and background knowledge related to numeracy situations that trigger my curiosity or interest.	• I access personal experiences and background knowledge related to numeracy situations to address my question, problem or curiosity, and identify gaps in background knowledge.	• I access personal experiences and background knowledge related to numeracy situations to address my question, problem or curiosity, identify gaps in background knowledge and determine ways to fill those knowledge gaps.	• I access personal experiences and background knowledge related to numeracy situations to address my question, problem or curiosity, and identify areas that require further refinement and determine ways to develop deeper knowledge or understandings.

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Numeracy Benchmarks (continued)

Strategies (continued)					
	Ages 4–5	**Ages 6–8**	**Ages 9–11**	**Ages 12–14**	**Ages 15–18+**
I use effective and efficient mental calculations and estimation strategies to manage ideas and information.	• I compare the quantities of two sets of objects without counting.	• I apply estimation and mental calculation strategies when solving quantity or measurement problems.	• I employ a variety of estimation and mental calculation strategies when solving problems.	• I apply the most effective estimation and mental calculation strategies for a particular situation.	• I apply efficient estimation and mental calculation strategies intuitively when solving complex problems.
I use effective and efficient problem-solving strategies to acquire knowledge and communicate understandings.	• I use non-symbolic strategies to solve simple problems by counting in different ways.	• I define a problem by clarifying the demands of the task and extracting the correct information. • I experiment with strategies to generate possible courses of action.	• I define a problem by filtering important information and identifying initial assumptions and limitations. • I review variables to determine their impact in alternate scenarios.	• I define a problem by scanning a variety of sources and summarizing important assumptions and information. • I determine the best solution by evaluating the validity of alternate solutions.	• I define a problem by synthesizing important assumptions, restrictions and information to support gist-based reasoning. • I demonstrate flexible thinking by evaluating many possible variables, strategies and solutions to make good decisions.
I analyze and evaluate information critically to draw conclusions and make decisions.	• I identify simple patterns in my immediate environment and describe the rule.	• I identify patterns with more than one attribute in my immediate environment to describe rules and make predictions.	• I analyze patterns effectively to identify rules or trends and make predictions. • I recognize that some data can be represented in misleading ways.	• I express generalizations about numbers, quantities, relations and functions when analyzing data. • I identify complex, implicit or ambiguous data that is misleading.	• I organize, triangulate and summarize complex, implicit or ambiguous data from a variety of sources. • I interpret statistical data and critically evaluate its compilation to draw informed conclusions.

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